

5 What is claimed is:

1. A lead electrode assembly for use with an implantable cardioverter-defibrillator subcutaneously implanted outside a patient's ribcage between the third and twelfth ribs, wherein the lead electrode assembly comprises an electrode.

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2. The lead electrode assembly of claim 1, wherein the electrode can emit an effective energy for shocking the patient's heart.

3. The lead electrode assembly of claim 2, wherein the effective energy for shocking the patient's heart is approximately 25 J to approximately 50 J.

4. The lead electrode assembly of claim 2, wherein the effective energy for shocking the patient's heart is approximately 50 J to approximately 75 J.

5. The lead electrode assembly of claim 2, wherein the effective energy for shocking the patient's heart is approximately 75 J to approximately 100 J.

5 6. The lead electrode assembly of claim 2, wherein the
effective energy for shocking the patient's heart is
approximately 100 J to approximately 125 J.

10 7. The lead electrode assembly of claim 2, wherein the
effective energy for shocking the patient's heart is
approximately 125 J to approximately 150 J.

15 8. The lead electrode assembly of claim 2, wherein the
effective energy for shocking the patient's heart is
approximately 150 J.

20 9. The lead electrode assembly of claim 2, wherein the
electrode can further receive physiological information from the
patient through sensors.

25 10. The lead electrode assembly of claim 1, wherein the
electrode can receive physiological information from the patient
through sensors.

30 11. The lead electrode assembly of claim 1, wherein at
least a portion of the electrode is non-planar.

5 12. The lead electrode assembly of claim 1, wherein the
electrode is substantially ellipsoidal in shape.

 13. The lead electrode assembly of claim 1, wherein the
electrode is substantially thumbnail shaped.

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 14. The lead electrode assembly of claim 1, wherein the
electrode is substantially circular in shape.

 15. The lead electrode assembly of claim 1, wherein the
electrode is substantially square in shape.

 16. The lead electrode assembly of claim 15, wherein the
electrode comprises rounded corners.

20 17. The lead electrode assembly of claim 1, wherein the
electrode is substantially rectangular in shape.

 18. The lead electrode assembly of claim 17, wherein the
electrode comprises rounded corners.

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 19. The lead electrode assembly of claim 1, wherein the
electrode is substantially triangular in shape.

5 20. The lead electrode assembly of claim 19, wherein the
electrode comprises rounded corners.

21. The lead electrode assembly of claim 1, wherein the
electrode is less than approximately 1000 square millimeters in
10 area.

22. The lead electrode assembly of claim 21, wherein the
electrode is between approximately 750 square millimeters to
approximately 1000 square millimeters in area.

23. The lead electrode assembly of claim 22, wherein the
electrode is between approximately 500 square millimeters to
approximately 750 square millimeters in area.

24. The lead electrode assembly of claim 1, wherein the
electrode is between approximately 250 square millimeters to
approximately 500 square millimeters in area.

25. The lead electrode assembly of claim 1, wherein the
25 electrode is between approximately 100 square millimeters to
approximately 250 square millimeters in area.

5 26. The lead electrode assembly of claim 1, wherein the
electrode is positioned approximately in a posterior region of
the patient's ribcage.

10 27. The lead electrode assembly of claim 1, wherein the
electrode is positioned approximately in a paraspinal region of
the patient.

15 28. The lead electrode assembly of claim 1, wherein the
electrode is positioned approximately in a parascapular region
of the patient.

20 29. The lead electrode assembly of claim 1, wherein the
electrode is positioned approximately posterior to a mid
axillary line of the patient.

25 30. The lead electrode assembly of claim 1, wherein the
electrode is positioned approximately posterior and lateral to
an anterior axillary line of the patient.

30 31. The lead electrode assembly of claim 1, wherein lead
electrode assembly further comprises a backing layer coupled to
the electrode.

5 32. The lead electrode assembly of claim 31, wherein the
backing layer comprises a polymeric material.

 33. The lead electrode assembly of claim 32, wherein the
polymeric material is selected from the group consisting
10 essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

15 34. The lead electrode assembly of claim 31, wherein the
backing layer is substantially planar.

 35. The lead electrode assembly of claim 34, wherein the
backing layer is substantially parallel to the electrode.

20 36. The lead electrode assembly of claim 1, wherein at
least a portion of the electrode is covered by a skirt.

 37. The lead electrode assembly of claim 1, wherein the
25 lead electrode assembly further comprises a molded cover coupled
to the electrode.

5 38. The lead electrode assembly of claim 37, wherein the
molded cover partially covers the electrode

39. The lead electrode assembly of claim 38, wherein the
molded cover comprises a skirt that partially covers a bottom
10 surface of the electrode.

40. The lead electrode assembly of claim 37, wherein the
molded cover comprises a polymeric material.

15 41. The lead electrode assembly of claim 40, wherein the
polymeric material is selected from the group consisting
essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
20 thereof.

42. The lead electrode assembly of claim 1, wherein the
electrode comprises a mesh of metallic material.

25 43. The lead electrode assembly of claim 42, wherein the
metallic material is selected from the group consisting
essentially of titanium, nickel alloys, stainless steel alloys,
platinum, platinum iridium, and mixtures thereof.

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44. The lead electrode assembly of claim 1, wherein the electrode comprises a metallic material.

45. The lead electrode assembly of claim 44, wherein the
10 metallic material is selected from the group consisting essentially of titanium, nickel alloys, stainless steel alloys, platinum, platinum iridium, and mixtures thereof.

46. The lead electrode assembly of claim 1, wherein the
15 electrode is substantially planar.

47. The lead electrode assembly of claim 1, wherein the
20 electrode comprises a substantially flat sheet of metallic material.

48. The lead electrode assembly of claim 47, wherein the
metallic material is selected from the group consisting essentially of titanium, nickel alloys, stainless steel alloys, platinum, platinum iridium, and mixtures thereof.

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49. The lead electrode assembly of claim 1, wherein the lead electrode assembly further comprises a lead coupled to the electrode.

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50. The lead electrode assembly of claim 49, wherein the lead comprises one or more electrical conductors electrically coupled to the electrode.

10 51. The lead electrode assembly of claim 50, wherein the lead further comprises an electrically insulating sheath enclosing the one or more electrical conductors.

15 52. The lead electrode assembly of claim 49, wherein the lead electrode assembly further comprises a connector coupled to the lead.

20 53. The lead electrode assembly of claim 52, wherein the connector is electrically coupled to the electrode.

54. The lead electrode assembly of claim 49, wherein the lead is between approximately 5 cm and approximately 52 cm in length.

25 55. The lead electrode assembly of claim 54, wherein the lead is between approximately 5 cm and approximately 30 cm in length.

5 56. The lead electrode assembly of claim 55, wherein the
lead is between approximately 10 cm and approximately 20 cm in
length.

 57. The lead electrode assembly of claim 54, wherein the
10 lead length is one of a plurality of pre-set lengths.

 58. The lead electrode assembly of claim 57, wherein the
pre-set lengths vary by approximately 10 cm.

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15 59. The lead electrode assembly of claim 49, wherein the
lead has a proximal end and a distal end and wherein the
proximal end of the lead is coupled to the electrode.

20 60. The lead electrode assembly of claim 59, wherein the
lead electrode assembly further comprises a lead fastener
coupled between the lead and the electrode.

 61. An implantable cardioverter-defibrillator for
subcutaneous positioning between the third rib and the twelfth
25 rib within a patient, the implantable cardioverter-defibrillator
comprising:

 a housing;

 an electrical circuit located within the housing;

5 a first electrode coupled to the electrical circuit
and located on the housing; and

 a lead electrode assembly coupled to the housing,
wherein the lead electrode assembly comprises:

 a second electrode coupled to the electrical circuit.

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62. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode can emit an effective
energy for shocking the patient's heart.

15 63. The implantable cardioverter-defibrillator of
claim 62, wherein the effective energy for shocking the
patient's heart is approximately 25 J to approximately 50 J.

20 64. The implantable cardioverter-defibrillator of
claim 62, wherein the effective energy for shocking the
patient's heart is approximately 50 J to approximately 75 J.

25 65. The implantable cardioverter-defibrillator of
claim 62, wherein the effective energy for shocking the
patient's heart is approximately 75 J to approximately 100 J.

5 66. The implantable cardioverter-defibrillator of
claim 62, wherein the effective energy for shocking the
patient's heart is approximately 100 J to approximately 125 J.

10 67. The implantable cardioverter-defibrillator of
claim 62, wherein the effective energy for shocking the
patient's heart is approximately 125 J to approximately 150 J.

15 68. The implantable cardioverter-defibrillator of
claim 62, wherein the effective energy for shocking the
patient's heart is approximately 150 J.

20 69. The implantable cardioverter-defibrillator of
claim 62, wherein the second electrode can further receive
physiological information from the patient through sensors.

 70. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode can receive physiological
information from the patient through sensors.

25 71. The implantable cardioverter-defibrillator of
claim 61, wherein at least a portion of the second electrode is
non-planar.

5 72. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially
ellipsoidal in shape.

10 73. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially
thumbnail shaped.

15 74. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially circular
in shape.

20 75. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially square
in shape.

 76. The implantable cardioverter-defibrillator of
claim 75, wherein the second electrode comprises rounded
corners.

25 77. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially
rectangular in shape.

5 78. The implantable cardioverter-defibrillator of
claim 77, wherein the second electrode comprises rounded
corners.

10 79. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially
triangular in shape.

15 80. The implantable cardioverter-defibrillator of
claim 79, wherein the second electrode comprises rounded
corners.

20 81. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is less than
approximately 1000 square millimeters in area.

25 82. The implantable cardioverter-defibrillator of
claim 81, wherein the second electrode is between approximately
750 square millimeters to approximately 1000 square millimeters
in area.

 83. The implantable cardioverter-defibrillator of
claim 82, wherein the second electrode is between approximately

5 500 square millimeters to approximately 750 square millimeters
in area.

84. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is between approximately
10 250 square millimeters to approximately 500 square millimeters
in area.

85. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is between approximately
15 100 square millimeters to approximately 250 square millimeters
in area.

86. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is positioned
20 approximately in a posterior region of the patient's ribcage.

87. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is positioned
approximately in a paraspinal region of the patient.

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88. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is positioned
approximately in a parascapular region of the patient.

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89. The implantable cardioverter-defibrillator of claim 61, wherein the second electrode is positioned approximately posterior to a mid axillary line of the patient.

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90. The implantable cardioverter-defibrillator of claim 61, wherein the second electrode is positioned approximately posterior and lateral to an anterior axillary line of the patient.

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91. The implantable cardioverter-defibrillator of claim 61, wherein lead electrode assembly further comprises a backing layer coupled to the second electrode.

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92. The implantable cardioverter-defibrillator of claim 91, wherein the backing layer comprises a polymeric material.

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93. The implantable cardioverter-defibrillator of claim 92, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

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94. The implantable cardioverter-defibrillator of claim 92, wherein the backing layer is substantially planar.

95. The implantable cardioverter-defibrillator of claim 94, wherein the backing layer is substantially parallel to the second electrode.

96. The implantable cardioverter-defibrillator of claim 61, wherein at least a portion of the second electrode is covered by a skirt.

97. The implantable cardioverter-defibrillator of claim 61, wherein the lead electrode assembly further comprises a molded cover coupled to the second electrode.

98. The implantable cardioverter-defibrillator of claim 97, wherein the molded cover partially covers the second electrode

99. The implantable cardioverter-defibrillator of claim 98, wherein the molded cover comprises a skirt that partially covers a bottom surface of the second electrode.

5 100. The implantable cardioverter-defibrillator of
claim 97, wherein the molded cover comprises a polymeric
material.

10 101. The implantable cardioverter-defibrillator of
claim 100, wherein the polymeric material is selected from the
group consisting essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

15 102. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode comprises a mesh of
metallic material.

20 103. The implantable cardioverter-defibrillator of claim
102, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

25 104. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode comprises a metallic
material.

5 105. The implantable cardioverter-defibrillator of claim
104, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

10 106. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode is substantially planar.

15 107. The implantable cardioverter-defibrillator of
claim 61, wherein the second electrode comprises a substantially
flat sheet of metallic material.

20 108. The implantable cardioverter-defibrillator of claim
107, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

25 109. The implantable cardioverter-defibrillator of
claim 61, wherein the lead electrode assembly further comprises
a lead coupled between the housing and the second electrode.

 110. The implantable cardioverter-defibrillator of
claim 109, wherein the lead comprises one or more electrical
conductors electrically coupled to the second electrode.

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111. The implantable cardioverter-defibrillator of claim 110, wherein the lead further comprises an electrically insulating sheath enclosing the one or more electrical conductors.

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112. The implantable cardioverter-defibrillator of claim 109, wherein the lead electrode assembly further comprises a connector coupled to the lead.

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113. The implantable cardioverter-defibrillator of claim 112, wherein the connector is electrically coupled to the second electrode.

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114. The implantable cardioverter-defibrillator of claim 109, wherein the lead is between approximately 5 cm and approximately 52 cm in length.

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115. The implantable cardioverter-defibrillator of claim 114, wherein the lead is between approximately 5 cm and approximately 30 cm in length.

5 116. The implantable cardioverter-defibrillator of
claim 115, wherein the lead is between approximately 10 cm and
approximately 20 cm in length.

10 117. The implantable cardioverter-defibrillator of
claim 114, wherein the lead length is one of a plurality of pre-
set lengths.

15 118. The implantable cardioverter-defibrillator of
claim 117, wherein the pre-set lengths vary by approximately 10
cm.

20 119. The implantable cardioverter-defibrillator of
claim 109, wherein the lead has a proximal end and a distal end
and wherein the proximal end of the lead is coupled to the
second electrode.

25 120. The implantable cardioverter-defibrillator of
claim 119, wherein the lead electrode assembly further comprises
a lead fastener coupled between the lead and the second
electrode.

121. A lead electrode assembly for subcutaneous
implantation in a patient's posterior thorax from an incision in

5 the skin covering the patient's anterior thorax comprising an
electrode.

122. The lead electrode assembly of claim 121, wherein the
electrode can emit an effective energy for shocking the
10 patient's heart.

123. The lead electrode assembly of claim 122, wherein the
effective energy for shocking the patient's heart is
approximately 25 J to approximately 50 J.

124. The lead electrode assembly of claim 122, wherein the
effective energy for shocking the patient's heart is
approximately 50 J to approximately 75 J.

125. The lead electrode assembly of claim 122, wherein the
effective energy for shocking the patient's heart is
approximately 75 J to approximately 100 J.

126. The lead electrode assembly of claim 122, wherein the
25 effective energy for shocking the patient's heart is
approximately 100 J to approximately 125 J.

5 127. The lead electrode assembly of claim 122, wherein the
effective energy for shocking the patient's heart is
approximately 125 J to approximately 150 J.

10 128. The lead electrode assembly of claim 122, wherein the
effective energy for shocking the patient's heart is
approximately 150 J.

15 129. The lead electrode assembly of claim 122, wherein the
electrode can further receive physiological information from the
patient through sensors.

20 130. The lead electrode assembly of claim 121, wherein the
electrode can receive physiological information from the patient
through sensors.

 131. The lead electrode assembly of claim 121, wherein at
least a portion of the electrode is non-planar.

25 132. The lead electrode assembly of claim 121, wherein the
electrode is substantially ellipsoidal in shape.

 133. The lead electrode assembly of claim 121, wherein the
electrode is substantially thumbnail shaped.

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134. The lead electrode assembly of claim 121, wherein the electrode is substantially circular in shape.

135. The lead electrode assembly of claim 121, wherein the
10 electrode is substantially square in shape.

136. The lead electrode assembly of claim 135, wherein the electrode comprises rounded corners.

137. The lead electrode assembly of claim 121, wherein the
15 electrode is substantially rectangular in shape.

138. The lead electrode assembly of claim 137, wherein the
20 electrode comprises rounded corners.

139. The lead electrode assembly of claim 121, wherein the electrode is substantially triangular in shape.

140. The lead electrode assembly of claim 139, wherein the
25 electrode comprises rounded corners.

5 141. The lead electrode assembly of claim 121, wherein the
electrode is less than approximately 1000 square millimeters in
area.

10 142. The lead electrode assembly of claim 141, wherein the
electrode is between approximately 750 square millimeters to
approximately 1000 square millimeters in area.

15 143. The lead electrode assembly of claim 142, wherein the
electrode is between approximately 500 square millimeters to
approximately 750 square millimeters in area.

20 144. The lead electrode assembly of claim 121, wherein the
electrode is between approximately 250 square millimeters to
approximately 500 square millimeters in area.

 145. The lead electrode assembly of claim 121, wherein the
electrode is between approximately 100 square millimeters to
approximately 250 square millimeters in area.

25 146. The lead electrode assembly of claim 121, wherein the
electrode is positioned approximately in a posterior region of
the patient's ribcage.

5 147. The lead electrode assembly of claim 121, wherein the
electrode is positioned approximately in a paraspinal region of
the patient.

10 148. The lead electrode assembly of claim 121, wherein the
electrode is positioned approximately in a parascapular region
of the patient.

15 149. The lead electrode assembly of claim 121, wherein the
electrode is positioned approximately posterior to a mid
axillary line of the patient.

20 150. The lead electrode assembly of claim 121, wherein the
electrode is positioned approximately posterior and lateral to
an anterior axillary line of the patient.

 151. The lead electrode assembly of claim 121, wherein lead
electrode assembly further comprises a backing layer coupled to
the electrode.

25 152. The lead electrode assembly of claim 151, wherein the
backing layer comprises a polymeric material.

5 153. The lead electrode assembly of claim 152, wherein the
polymeric material is selected from the group consisting
essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
10 thereof.

154. The lead electrode assembly of claim 151, wherein the
backing layer is substantially planar.

155. The lead electrode assembly of claim 154, wherein the
backing layer is substantially parallel to the electrode.

156. The lead electrode assembly of claim 121, wherein at
least a portion of the electrode is covered by a skirt.

157. The lead electrode assembly of claim 121, wherein the
lead electrode assembly further comprises a molded cover coupled
to the electrode.

25 158. The lead electrode assembly of claim 157, wherein the
molded cover partially covers the electrode

5 159. The lead electrode assembly of claim 158, wherein the
molded cover comprises a skirt that partially covers a bottom
surface of the electrode.

10 160. The lead electrode assembly of claim 157, wherein the
molded cover comprises a polymeric material.

15 161. The lead electrode assembly of claim 160, wherein the
polymeric material is selected from the group consisting
essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

20 162. The lead electrode assembly of claim 121, wherein the
electrode comprises a mesh of metallic material.

25 163. The lead electrode assembly of claim 162, wherein the
metallic material is selected from the group consisting
essentially of titanium, nickel alloys, stainless steel alloys,
platinum, platinum iridium, and mixtures thereof.

 164. The lead electrode assembly of claim 121, wherein the
electrode comprises a metallic material.

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165. The lead electrode assembly of claim 164, wherein the metallic material is selected from the group consisting essentially of titanium, nickel alloys, stainless steel alloys, platinum, platinum iridium, and mixtures thereof.

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166. The lead electrode assembly of claim 121, wherein the electrode is substantially planar.

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167. The lead electrode assembly of claim 121, wherein the electrode comprises a substantially flat sheet of metallic material.

168. The lead electrode assembly of claim 167, wherein the metallic material is selected from the group consisting essentially of titanium, nickel alloys, stainless steel alloys, platinum, platinum iridium, and mixtures thereof.

169. The lead electrode assembly of claim 121, wherein the lead electrode assembly further comprises a lead coupled to the electrode.

5 170. The lead electrode assembly of claim 169, wherein the
lead comprises one or more electrical conductors electrically
coupled to the electrode.

10 171. The lead electrode assembly of claim 170, wherein the
lead further comprises an electrically insulating sheath
enclosing the one or more electrical conductors.

15 172. The lead electrode assembly of claim 169, wherein the
lead electrode assembly further comprises a connector coupled to
the lead.

20 173. The lead electrode assembly of claim 172, wherein the
connector is electrically coupled to the electrode.

25 174. The lead electrode assembly of claim 169, wherein the
lead is between approximately 5 cm and approximately 52 cm in
length.

30 175. The lead electrode assembly of claim 174, wherein the
lead is between approximately 5 cm and approximately 30 cm in
length.

5 176. The lead electrode assembly of claim 175, wherein the
lead is between approximately 10 cm and approximately 20 cm in
length.

10 177. The lead electrode assembly of claim 174, wherein the
lead length is one of a plurality of pre-set lengths.

178. The lead electrode assembly of claim 177, wherein the
pre-set lengths vary by approximately 10 cm.

15 179. The lead electrode assembly of claim 169, wherein the
lead has a proximal end and a distal end and wherein the
proximal end of the lead is coupled to the electrode.

20 180. The lead electrode assembly of claim 179, wherein the
lead electrode assembly further comprises a lead fastener
coupled between the lead and the electrode.

25 181. An implantable cardioverter-defibrillator for
subcutaneous positioning between the third rib and the twelfth
rib within a patient, the implantable cardioverter-defibrillator
comprising:

 a housing; and

5 a lead electrode assembly coupled to the housing,
 wherein the lead electrode assembly comprises:
 an electrode.

182. The implantable cardioverter-defibrillator of
10 claim 181, wherein the electrode can emit an effective energy
 for shocking the patient's heart.

183. The implantable cardioverter-defibrillator of
15 claim 182, wherein the effective energy for shocking the
 patient's heart is approximately 25 J to approximately 50 J.

184. The implantable cardioverter-defibrillator of
20 claim 182, wherein the effective energy for shocking the
 patient's heart is approximately 50 J to approximately 75 J.

185. The implantable cardioverter-defibrillator of
 claim 182, wherein the effective energy for shocking the
 patient's heart is approximately 75 J to approximately 100 J.

25 186. The implantable cardioverter-defibrillator of
 claim 182, wherein the effective energy for shocking the
 patient's heart is approximately 100 J to approximately 125 J.

5 187. The implantable cardioverter-defibrillator of
claim 182, wherein the effective energy for shocking the
patient's heart is approximately 125 J to approximately 150 J.

10 188. The implantable cardioverter-defibrillator of
claim 182, wherein the effective energy for shocking the
patient's heart is approximately 150 J.

15 189. The implantable cardioverter-defibrillator of
claim 182, wherein the electrode can further receive
physiological information from the patient through sensors.

20 190. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode can receive physiological
information from the patient through sensors.

 191. The implantable cardioverter-defibrillator of
claim 181, wherein at least a portion of the electrode is non-
planar.

25 192. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially ellipsoidal in
shape.

5 193. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially thumbnail
shaped.

10 194. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially circular in
shape.

15 195. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially square in
shape.

20 196. The implantable cardioverter-defibrillator of
claim 195, wherein the electrode comprises rounded corners.

25 197. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially rectangular in
shape.

30 198. The implantable cardioverter-defibrillator of
claim 197, wherein the electrode comprises rounded corners.

5 199. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially triangular in
shape.

10 200. The implantable cardioverter-defibrillator of
claim 199, wherein the electrode comprises rounded corners.

15 201. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is less than approximately 1000
square millimeters in area.

20 202. The implantable cardioverter-defibrillator of
claim 201, wherein the electrode is between approximately 750
square millimeters to approximately 1000 square millimeters in
area.

25 203. The implantable cardioverter-defibrillator of
claim 202, wherein the electrode is between approximately 500
square millimeters to approximately 750 square millimeters in
area.

 204. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is between approximately 250

5 square millimeters to approximately 500 square millimeters in
area.

205. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is between approximately 100
10 square millimeters to approximately 250 square millimeters in
area.

206. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is positioned approximately in
15 a posterior region of the patient's ribcage.

207. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is positioned approximately in
a paraspinal region of the patient.

208. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is positioned approximately in
a parascapular region of the patient.

25 209. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is positioned approximately
posterior to a mid axillary line of the patient.

5 210. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is positioned approximately
posterior and lateral to an anterior axillary line of the
patient.

10 211. The implantable cardioverter-defibrillator of
claim 181, wherein lead electrode assembly further comprises a
backing layer coupled to the electrode.

15 212. The implantable cardioverter-defibrillator of
claim 211, wherein the backing layer comprises a polymeric
material.

20 213. The implantable cardioverter-defibrillator of
claim 212, wherein the polymeric material is selected from the
group consisting essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

25 214. The implantable cardioverter-defibrillator of
claim 211, wherein the backing layer is substantially planar.

5 215. The implantable cardioverter-defibrillator of
claim 214, wherein the backing layer is substantially parallel
to the electrode.

10 216. The implantable cardioverter-defibrillator of
claim 181, wherein at least a portion of the electrode is
covered by a skirt.

15 217. The implantable cardioverter-defibrillator of
claim 181, wherein the lead electrode assembly further comprises
a molded cover coupled to the electrode.

20 218. The implantable cardioverter-defibrillator of
claim 217, wherein the molded cover partially covers the
electrode

25 219. The implantable cardioverter-defibrillator of
claim 218, wherein the molded cover comprises a skirt that
partially covers a bottom surface of the electrode.

30 220. The implantable cardioverter-defibrillator of
claim 217, wherein the molded cover comprises a polymeric
material.

5 221. The implantable cardioverter-defibrillator of
claim 220, wherein the polymeric material is selected from the
group consisting essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
10 thereof.

222. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode comprises a mesh of metallic
material.

223. The implantable cardioverter-defibrillator of claim
222, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

224. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode comprises a metallic material.

25 225. The implantable cardioverter-defibrillator of claim
224, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

5 226. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode is substantially planar.

10 227. The implantable cardioverter-defibrillator of
claim 181, wherein the electrode comprises a substantially flat
sheet of metallic material.

15 228. The implantable cardioverter-defibrillator of claim
227, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

20 229. The implantable cardioverter-defibrillator of
claim 181, wherein the lead electrode assembly further comprises
a lead coupled between the electrode and the housing.

25 230. The implantable cardioverter-defibrillator of
claim 229, wherein the lead comprises one or more electrical
conductors electrically coupled to the electrode.

 231. The implantable cardioverter-defibrillator of
claim 230, wherein the lead further comprises an electrically
insulating sheath enclosing the one or more electrical
conductors.

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232. The implantable cardioverter-defibrillator of claim 229, wherein the lead electrode assembly further comprises a connector coupled to the lead.

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233. The implantable cardioverter-defibrillator of claim 232, wherein the connector is electrically coupled to the electrode.

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234. The implantable cardioverter-defibrillator of claim 229, wherein the lead is between approximately 5 cm and approximately 52 cm in length.

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235. The implantable cardioverter-defibrillator of claim 234, wherein the lead is between approximately 5 cm and approximately 30 cm in length.

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236. The implantable cardioverter-defibrillator of claim 235, wherein the lead is between approximately 10 cm and approximately 20 cm in length.

237. The implantable cardioverter-defibrillator of claim 234, wherein the lead length is one of a plurality of pre-set lengths.

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238. The implantable cardioverter-defibrillator of claim 237, wherein the pre-set lengths vary by approximately 10 cm.

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239. The implantable cardioverter-defibrillator of claim 229, wherein the lead has a proximal end and a distal end and wherein the proximal end of the lead is coupled to the electrode.

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240. The implantable cardioverter-defibrillator of claim 239, wherein the lead electrode assembly further comprises a lead fastener coupled between the lead and the electrode.